states that "it is not clear what recited feature of the 'blocking artifacts in the image indicative of compression' distinguishes from the byte boundary information detected in Hintzman et al." The pending claim clearly distinguishes over the cited art. The 102(e) rejection is not properly supported and is therefore traversed. Reconsideration is respectfully requested.

A "block boundary" is not equivalent to the "byte boundary" taught in Hintzman. The byte boundary described in Hintzman et a. is described at col. 5, lines 11-14 in reference to Figure 2, and is denoted as being consistent with the data structure format standardized in the well-known JPEG data compression scheme. The Examiner is invited to review paragraph 7.3 of the following well-known publication, available on the internet:

G. K. Wallace, "The JPEG still picture compression standard," *IEEE Trans. on Consumer Electronics*, vol. 38, no. 1, pp. 18-34, Feb. 1992
(available at : http://white.stanford.edu/~brian/psy221/reader/Wallace.JPEG.pdf )

Those skilled in the art would not equate the byte boundaries in a JPEG encoded bit stream with the block boundaries of an image. In fact, even Hintzman et al. refer to the "JPEG standard defined RESTART and END_OF_IMAGE ("EOI") markers" being present on the compressed JPEG data stream on byte boundaries. These terms simply refer to bits denoting positional relationships of bytes of data. These bits are used for data handling functions "to indicate on which byte boundary in the 32-bit input word the marker was detected."

During the phase in which a bit stream represents a compressed (encoded) image, and thus the image is available for storage in memory, the actual source image, and any artifacts due to such compression, are abstractions. The block boundaries in a JPEG encoding scheme are represented by a variable amount of bits which are not byte-aligned, in general, and thus byte boundary information is irrelevant to the image blocks (and the image block artifacts) that may exist, abstractly, in a JPEG-encoded image data stream. Accordingly, the "byte boundaries" disclosed in the reference have insufficient relation to the "block boundaries" claimed in claim 25 such that one skilled in the art would consider them the same or similar.

The Examiner states that "it is not clear what recited feature of the 'blocking artifacts in the image indicative of compression' distinguishes from the byte boundary

information detected in Hintzman et al." The Examiner also equates "artifact" with "artificially introduced bits" and seems to equate the byte boundary information of Hintzman et al. with the claimed blocking artifacts. As already stated, the byte boundaries disclosed in the cited reference have insufficient relation to the claimed block boundaries and blocking artifacts. An interpretation of these terms as being distinguishable fully comports with their usage provided in the cited reference, in the pending application, and in common usage by those skilled in the art. Artifacts in conventional usage refer to image defects in a compressed image that were not present in the original, uncompressed source image, and need not be limited to as "artificially introduced bits", nor are they present as the "byte boundary information" in the JPEG encoded data format denoted in Hintzman et al.

An image artifact is typically regarded as something "wrong" with the picture from a visual standpoint. As was originally stated in the Specification at page 4, lines 14-18:

> Thus, discontinuities across block boundaries (blocking effects) account for the most noticeable compression artifact caused by JPEG compression. The higher the compression the higher the blocking. The present invention performs an analysis of the blocking discontinuities as an indicative of compression history."

Claim 25 recites "...blocking artifacts presented in the form of discontinuities across *block boundaries in the image...*" (emphasis added.) The block boundaries are where such discontinuities in the decoded image are typically noticeable, and according to the claimed invention, their presence in their abstract form (in the encoded data stream) may be detected, and the presence of such discontinuities will indicate that the image has been compressed.

Furthermore, the Examiner supported the rejection upon alleged disclosure of the second claimed step in claim 25, that is, "providing an output indicative of compression upon detection of the blocking artifacts." The Examiner presumably refers to Hintzman et al. at col. 5, line 24 (production of a 4-bit output in response to detection of a marker by detector 205.) These "4 bits are output to indicate on which byte boundary in the 32-bit input word the marker was detected." Hintzman et al. teaches only an output that denotes the location of a marker, and there is neither description or

suggestion therein of an output indicating image compression, nor is there an output provided in response to a detection of blocking artifacts.

Accordingly, Applicant respectfully traverses the rejection. Hintzman et al. discloses merely the detection of byte boundary information in a Huffman code word coefficient pair by use of a 4-bit string on bus 202 to a RLL detector 203. (See col. 2, lines 6-10; col. 4, lines 17-22.) There is no disclosure or teaching of the claimed detection of blocking artifacts in an image, with such artifacts being detected for the purpose of determining whether compression has been done, with a response being the provision of an output that is indicative of such compression.

All claims are believed to be in condition for allowance. Applicant respectfully requests reconsideration. No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation, Deposit Account No. 24-0025.

Respectfully submitted,

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